# Research Skill Development Framework



For educators to facilitate the explicit, coherent, incremental and cyclic development of the skills associated with researching, problem solving, critical thinking and clinical reasoning.

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## Scope for Student Autonomy

| Students develop research mindedness when they… | | **Prescribed Research**<br>Highly structured directions and modelling from educator prompt researching, in which… | **Bounded Research**<br>Boundaries set by and limited directions from educator channel researching, in which… | **Scaffolded Research**<br>Scaffolds placed by educator shape independent researching, in which… | **Open-ended Research**<br>Students initiate research and this is guided by the educator. | **Unbounded Research**<br>Students determine guidelines for researching that are in accord with discipline or context. |
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| **Embark & Clarify**<br>*What is our purpose?*<br>Students respond to or initiate direction, clarify and consider ethical, cultural, social and team (ECST) issues. | Curious | Students respond to questions/tasks that are directed. Use a provided, structured approach to clarify questions, terms, requirements, expectations and ethical, cultural, social and team issues. | Students respond to questions/ tasks with limited options. Choose from several provided structures to clarify questions, requirements, terms, expectations and ethical, cultural, social and team issues. | Students respond to broad tasks/ questions given. Choose from a range of provided approaches or structures to clarify requirements, questions, expectations and ethical, cultural, social and team issues. | **Students generate questions /aims/hypotheses/purpose framed within structured guidelines*.*<br><br>Anticipate and prepare for ethical, cultural, social and team issues. | **Students generate questions/aims/ hypotheses/purpose based on experience, expertise and literature.*<br><br>Delve into and prepare for ethical, cultural, social and team issues. |
| **Find & Generate**<br>*What will we use?*<br>Students find information and generate data/ideas using appropriate methodology. | Determined | Students collect and record required information/data using a prescribed methodology from a prescribed source in which the information/data is evident. | Students collect and record appropriate information/data using given methodology from pre-determined source/s where information/data is not obvious. | Students collect and record appropriate information/data from self-selected sources using one of several provided methodologies. | Students collect and record self-determined information/data choosing an appropriate methodology based on parameters set. | Students collect and record information/data from self-selected sources, choosing or devising an appropriate methodology with self-structured guidelines. |
| **Evaluate & Reflect**<br>*What will we trust?*<br>Students determine the credibility of sources, information, data and ideas, and make their own research processes visible. | Discerning | Students evaluate sources/ information/data using simple prescribed criteria to specify credibility and to reflect on and improve the process used. | Students evaluate sources/ information/data using a choice of provided criteria to specify credibility and to reflect on and improve processes used. | Students evaluate sources/ information/data and the processes to find/generate, using criteria related to the aims of the inquiry to reflect on and improve processes used. | Students evaluate information/data and the inquiry process using self-determined criteria developed within parameters given. Reflect to refine own and others' processes. | Students evaluate information/data and inquiry process rigorously using self-generated criteria based on experience, expertise and the literature. Reflect to renew own and others' processes. |
| **Organise & Manage**<br>*How do we arrange?*<br>Students organise information & data to reveal patterns/themes, managing teams and processes. | Harmonising | Students organise information/data using prescribed structure. Manage linear process provided (with pre-specified team roles). | Students organise information/data using a choice of given structures. Manage a process which has alternative possible pathways (and specify team roles). | Students organise information/data using provided guidelines to choose structures. Manage processes (and teams) with multiple possible pathways. | Students organise information/data using self-determined or group-determined structures, and manage the processes (including team function) within the parameters set. | Students organise information/data using self-determined or group-determined structures and management processes (including team function). |
| **Analyse & Synthesise**<br>*What does it mean?*<br>Students analyse information/data critically and synthesise new knowledge to produce coherent individual/team understandings. | Creative | Students interpret given information/data, determine patterns and synthesise knowledge into prescribed formats.<br>**Ask emergent questions of clarification/curiosity*.* | Students analyse trends or themes in several sources of information/ data and synthesise to integrate knowledge into provided standard formats. **Ask emergent, relevant and researchable questions.** | Students analyse trends or themes in information/data and synthesise to fully integrate component parts in structures that are appropriate to task.<br>**Ask rigorous, researchable questions based on new understandings*.* | Students analyse information/data and synthesise to fully integrate components, consistent with self-determined parameters.<br>Fill knowledge gaps that are stated by others. | Students analyse and synthesise information/data to generalise or abstract knowledge that addresses self-identified or group-identified gaps in understanding. |
| **Communicate & Apply**<br>*How do we relate?*<br>Students apply their understanding and discuss, listen, write, perform, respond to feedback and present processes, knowledge and implications of research, heeding ethical, cultural, social and team (ECST) issues and audience needs. | Constructive | Students discuss with each other, listen, read and write to relate their prior and new knowledge to set tasks. Use prescribed language and genre to develop understanding and then demonstrate this to a specified audience. Apply to a similar context the knowledge developed. Follow prompts on ECST issues. | Students use some discipline-specific language and genre to relate their prior and newly developed knowledge to tasks and then to a specified audience. Apply the knowledge developed to several similar contexts and stay within boundaries set for ethical, cultural, social and team issues. | Students use discipline-specific or other appropriate language and select genres to develop understanding and relate this to an audience chosen from given options. Apply the knowledge developed to different contexts and specify the ethical, cultural, social and team issues that emerge. | Students choose appropriate language, genre and performance to extend the knowledge of an audience they have selected. Apply the knowledge developed to diverse contexts and specify ethical, cultural, social and team issues in initiating, conducting and communicating. | Students choose appropriate language, genre and performance to extend the knowledge of a range of audiences. Apply innovatively the knowledge developed to multiple contexts. Probe and specify ethical, cultural, social and team issues that emerge broadly. |

Facets of Research

Research is not merely gathering more information and generating more data. Research is engaging in all the above facets, time and again.

The RSD, a conceptual framework for Early Childhood to PhD, by John Willison and Kerry O'Regan, with much trialling by Eleanor Peirce and Mario Ricci. October 2006, revised November, 2019. Facets based on: ANZIIL (2004) & Bloom et al. (1956; 1964) Taxonomies: Perpendicular text reflects learning attitudes. Scope & autonomy inspired by Vygotsky (1980). Extent of synthesis is informed by SOLO taxonomy (Biggs & Collis, 1982). ** Framing researchable questions often requires a high degree of guidance and modelling for students and results from their synthesis (Red, Yellow), then initiates their research (Green & Blue).* Six facets may be used directly with students as a 'thinking routine' (Ritchhart & Perkins 2008). Resources and articles available at www.rsd.edu.au email: john.willison@adelaide.edu.au The RSD is the first of the MELT. www.melt.edu.au